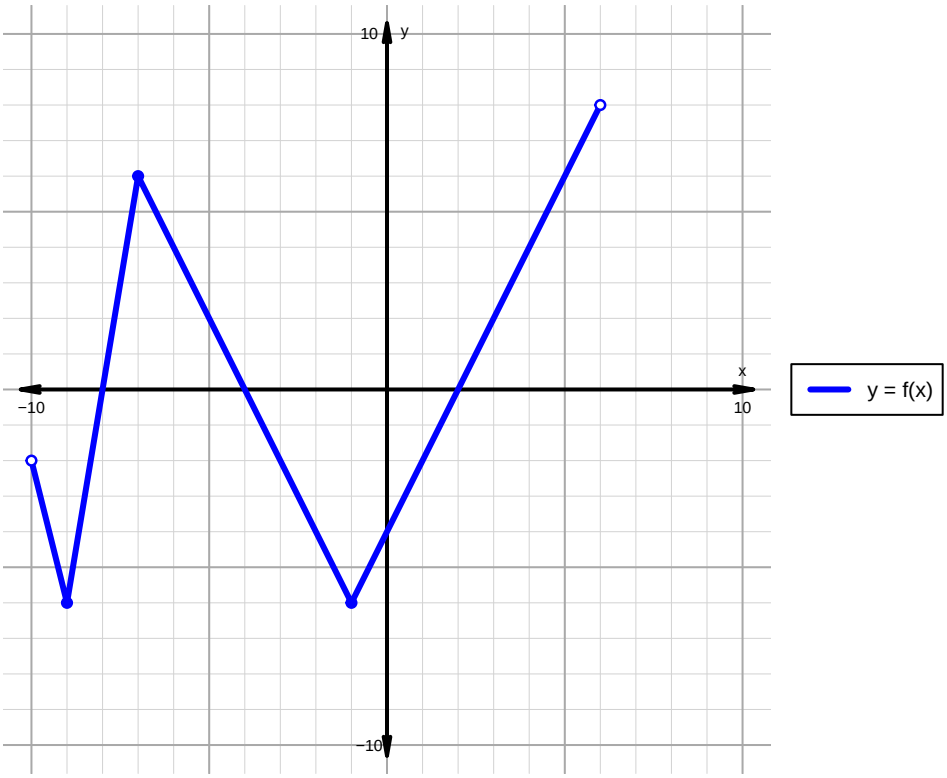
Name: Date:

Intervals, Transformations, and Slope Solution (version 33)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-8,-4) \cup (2,6)$
Negative	$(-10,-8) \cup (-4,2)$
Increasing	$(-9,-7) \cup (-1,6)$
Decreasing	$(-10,-9) \cup (-7,-1)$
Domain	$(-10,6)$
Range	$(-6,8)$

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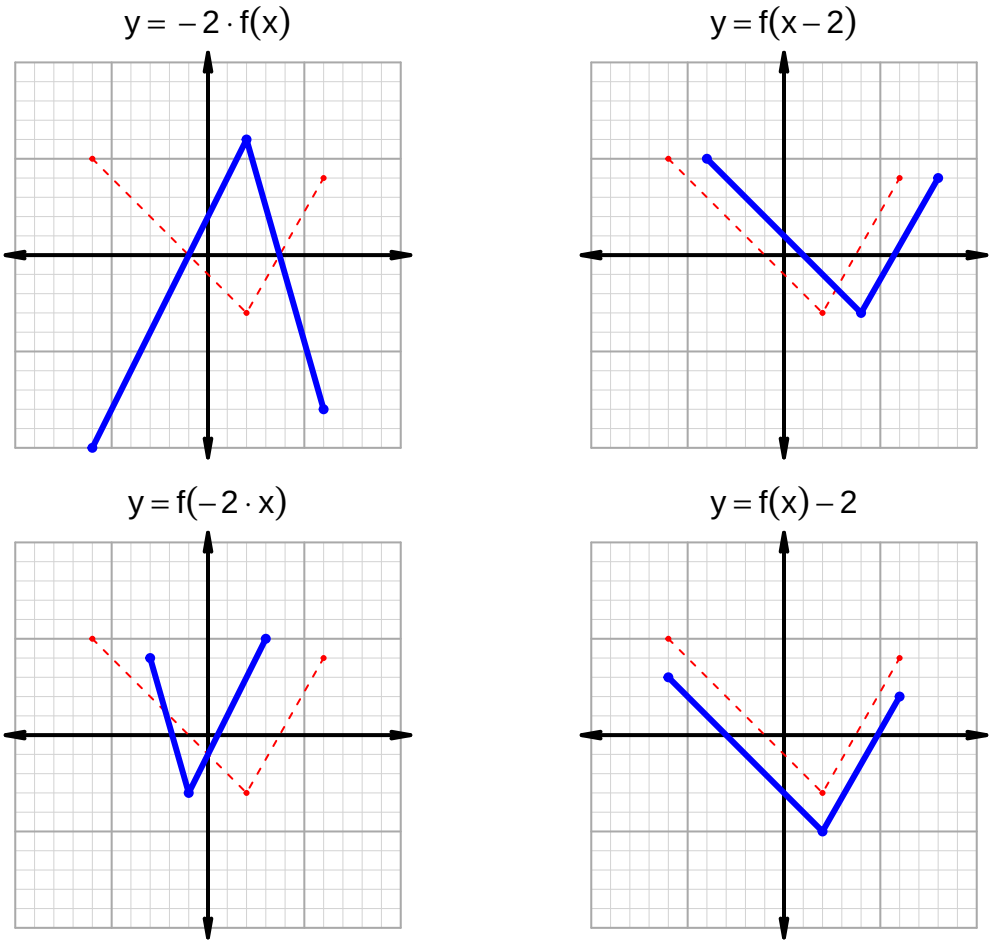
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 22$ and $x_2 = 49$. Express your answer as a reduced fraction.

x	$g(x)$
22	40
40	49
49	85
85	22

$\frac{f(49)-f(22)}{49-22} = \frac{85-40}{49-22} = \frac{45}{27}$

The greatest common factor of 45 and 27 is 9. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{3}$$